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SECURITY OF MATERIAL
Measures Against Illicit Trafficking in Nuclear Materials and Other Radioactive Sources

1. Last year, in resolution GC(41)RES/17, the General Conference, among other things, welcomed "the activities in the fields of prevention, response, training and information exchange undertaken by the Secretariat in support of efforts against illicit trafficking", invited the Director General "to continue working during the coming year in accordance with the relevant conclusions of the Board of Governors" and requested the Director General "to submit a report to the General Conference at its next regular session on activities undertaken by the Agency in the intervening period." The present document has been prepared in response to the request made to the Director General.

2. The Agency activities directed against illicit trafficking in nuclear materials and other radioactive sources, which form part of programme M, "Security of Material" within Major Programme 4, Nuclear Verification and Security of Material have continued as outlined in document GC(40)/10 ("The Agency's Programme and Budget for 1997 and 1998") and in GC(41)/21 (Measures Against Illicit Trafficking in Nuclear Materials and Other Radioactive Sources). The overall effort has also included legal support within the Agency's regular programme and Technical Co-operation (TC) projects, and for completeness these too are reported on in the present document.

For reasons of economy, this document has been issued in a limited number.
Delegates are kindly requested to bring their copies of documents to meetings.

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Information Exchange

Illicit Trafficking Database Programme

3. Currently, 60 States[1] are participating in the Secretariat's Illicit Trafficking Database Programme. The Secretariat is continuing to receive reports on cases where nuclear material and radioactive sources have been found outside their authorized storage locations, possibly in connection with illicit trafficking. As of 1 July 1998, the Illicit Trafficking Database contained information on 285 incidents (217 of them confirmed) which had occurred since 1993 (6% involving high-enriched uranium or plutonium, 54% involving low-enriched, natural or depleted uranium, and 40% involving other radioactive sources). 35 incidents occurred during the period September 1997-August 1998.

4. In April 1998, the Secretariat convened an expert meeting to review the Illicit Trafficking Database Programme. The review resulted in an improved reporting document, slightly revised terms of reference and rules for maintaining the confidentiality of information.

5. The Secretariat takes follow-up action to ensure that all nuclear materials which are seized after being the subject of illicit trafficking become covered by safeguards agreements in the States where they were seized. In one case, an inspection was performed to verify the item seized (a fuel element) and to assist the State in characterizing it.

Conferences

6. An "International Conference on Physical Protection of Nuclear Materials: Experience in Regulation, Implementation and Operations" - the first conference on this topic organized by the Secretariat - was held in Vienna from 10 to 14 November 1997; representatives of 42 countries and 8 international organizations participated. The discussions focused on the present regimes, equipment and procedures for minimizing the possibilities of unauthorized removal of nuclear materials from their storage locations. It was noted that there is a continuing need for States to review their physical protection systems, particularly at older facilities. The proceedings of the Conference were published in June 1998 (publication symbol STI/PUB/1037).

7. The Secretariat is in the process of organizing - together with the European Commission, the World Customs Organization and the International Criminal Police Organization (Interpol) - an "International Conference on the Safety of Radiation Sources and the Security of Radioactive Materials", which is to be held in Dijon, France, from 14 to 18 September 1998. The Conference will focus on administrative, technical and managerial measures to prevent the theft and unauthorized use of radioactive materials.

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[1] Argentina, Australia, Austria, Bangladesh, Belarus, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, Croatia, Cuba, Cyprus, the Czech Republic, Denmark, the Dominican Republic, Ecuador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Hungary, Israel, Italy, Japan, the Republic of Korea, Latvia, Lithuania, Mexico, Morocco, Namibia, the Netherlands, New Zealand, Nigeria, Norway, Peru, the Philippines, Poland, Portugal, Romania, the Russian Federation, Saudi Arabia, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Turkey, the Ukraine, the United Kingdom, the United States of America, Venezuela and Vietnam.

International Co-ordination

8. During the past three years, the Secretariat has been convening informal meetings - for information exchange purposes - of representatives of international organizations which have an interest in ensuring the safe transport and use of nuclear materials or which, because of their mandates, are involved in related law enforcement activities. The Secretariat believes that regular meetings of this kind will help to enhance co-ordination of efforts among the organizations in question and lead to a number of joint projects. To facilitate continued interaction, the Director General has invited these organizations to participate in an Inter-Agency Co-ordination Committee on the Illicit Cross-Border Movement of Nuclear Materials and Other Radioactive Sources and to convene a meeting in October 1998.

9. In November 1997, the Secretariat hosted a meeting of the Non-Proliferation Experts Group (NPEG) established by the Group of Eight (G-8), which - together with representatives of a number of countries - discussed the broader implementation of the "Programme for Preventing and Combating Illicit Trafficking in Nuclear Materials" agreed upon by the G-8 at the Moscow Summit in 1996 and confirmed at the Denver Summit of the Eight in 1997. The NPEG has expressed an interest in having closer co-operation with the Agency. The Secretariat has also been participating in the periodic meetings of the International Technical Working Group which provides technical support for the NPEG.

Protection of Nuclear Materials

Physical Protection of Nuclear Materials and Facilities

10. Nuclear material accountancy and physical protection constitute the first line of defense in ensuring that nuclear materials do not become the subject of unauthorized use leading to illicit trafficking. Although the responsibility for physical protection rests entirely with the State, it is recognized that efforts at the international level are also necessary. The Agency's activities in the physical protection area are directed at assisting States in their efforts to develop and implement systems for the protection of nuclear materials; the Agency is involved in developing and improving international standards for physical protection, it is helping States to assess their physical protection systems, it is providing training in physical protection and - where there is a particularly urgent need - it is helping to upgrade physical protection systems for strategic nuclear materials.

11. *Assessing physical protection systems.* The "International Physical Protection Advisory Service" (IPPAS), which is available to all States, assists Member States in assessing their State and facility-level physical protection systems. The reports on IPPAS missions, which are confidential, identify - where applicable - how the legal, administrative and technical components of the physical protection systems need to be improved. If national resources are not adequate for making the improvements, the Secretariat may advise the State in question on how to obtain support through - for example - bilateral co-operation programmes.

12. During 1997, IPPAS missions were conducted in two countries.

13. *Developing and maintaining international standards.* The Secretariat has initiated a review of document INFCIRC/225/Rev.3, "The Physical Protection of Nuclear Material". The recommendations contained in this document, which are not legally binding, acquire legal status when they are incorporated into legally binding documents such as co-operation agreements and into export control regimes. In June, a group of experts from 34 States started a comprehensive review of the recommendations, which is to be completed in October 1998 at a second meeting.

14. In November 1997, the Secretariat issued a technical document (IAEA-TECDOC-967) entitled "Guidance and Considerations in the Implementation of INFCIRC/225/Rev.3" in response to States' requests for further explanations of the physical protection recommendations. Also, the Secretariat has developed a draft *Design Handbook for Physical Protection Systems for Nuclear Materials and Facilities* which is due to be published early in 1999.

15. *Training in physical protection.* The Secretariat conducts, together with a number of Member States, national and regional physical protection training courses. The training is adapted to the needs of specific States and regions. The target audience are individuals responsible for administering regulatory systems and for designing and implementing physical protection systems. The training material has been, or is about to be, translated into Russian, Chinese and Spanish. During 1997, courses were held in China (national participation) and the Czech Republic (regional participation). In November 1998, a course will be held in Argentina (for Latin American countries, Spain and Portugal).

16. A regional physical protection workshop held in Kazakhstan in October 1997 addressed problems relating to national physical protection systems and provided opportunities for exchanges of experience between participants and lecturers.

17. Preparations have commenced for the convening, in January 1999, of a one-week workshop on physical protection and illicit trafficking for participants from countries of the Middle East and North Africa. The aim of the workshop is to address the need for physical protection systems, to discuss current concepts and technology and programmes for prevention, detection and response to illicit trafficking in nuclear materials and other radioactive sources.

Support to Authorities

18. Most of the Newly Independent States (NISs) have comprehensive safeguards agreements with the Agency and have taken steps to establish State Systems of Accounting for and Control of Nuclear Material (SSACs). A number of donor States have entered into bilateral co-operation with NISs and have committed resources to assisting them with the establishment and strengthening of SSACs, import/export control systems and physical protection systems.

19. The Secretariat has, together with donor States and NISs, established a *Co-ordinated Technical Support Programme* (*CTSP*) designed - inter alia - to avoid duplication of effort, identify needs and disseminate information. CTSP activities are under way in Armenia, Belarus, Georgia, Kazakhstan, Latvia, Lithuania, Ukraine and Uzbekistan, and preparations are being made for such activities in the remaining NIS.

20. In November 1997, the Secretariat convened a meeting with donor States to review ongoing and planned assistance for export/import control of nuclear material under the CTSP. The meeting resulted in a number of new CTSP tasks and a related implementation schedule. One of the followings of the meeting was to organize a regional workshop on export/import control for the central Asian States, which will be held by the Secretariat and Donor States in November 1998.

21. In February 1998, the Secretariat convened the third annual meeting for States (both donors and recipients) participating in the CTSP to review the achievements of the past year and implementation status of CTSP activities. It was concluded that, although the basic needs of the NISs in establishing SSACs had been met, the CTSP should continue and that a comprehensive review of its objectives would be undertaken at a meeting to be held in 1999.

22. During the past year, the Secretariat organized SSAC training courses in the United States and the Russian Federation which were attended by a large number of personnel from NISs and other countries. Two regional training courses on SSACs are to be held later this year, in Brazil and Australia.

Protection of Radioactive Sources

23. *Safety Guide.* The Secretariat is preparing a Safety Guide on the prevention, detection, and response to illicit trafficking in radioactive materials. The Safety Guide, which is expected to serve as a basis for national legislation and to provide practical assistance to Customs and other law enforcement authorities, is to be co-sponsored by the World Customs Organization, the International Criminal Police Organization (Interpol) and the Agency. The International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (the Basic Safety Standards), which relate to both the safety and the security of radiation sources, provide the scientific foundation for the Safety Guide.

24. *Memorandum of Understanding.* In May 1998, the Agency and the World Customs Organization signed a Memorandum of Understanding which provides for continued co-operation between the two organizations including information exchange, joint training and other activities.

25. The Secretariat and the World Customs Organization have designed, for customs and other officials, a detection and response training programme based on a five-day "train the trainers" course on the prevention of nuclear smuggling. The first course was held in June 1997, in Vienna, and the second will be held in September 1998. Experts from Germany, the United Kingdom and the United States have been invited to give presentations and 16 East and Central European countries have been invited to participate.

26. *Evaluation of border monitoring systems.* The Secretariat is co-operating with the Austrian and Hungarian customs authorities in a large-scale study of border monitoring systems and inspection procedures. During 1998, selected equipment underwent laboratory evaluation and will be installed during 1999 on a trial basis at customs posts, the aim being to obtain realistic information on performance requirements, reliability and cost-effectiveness. The results of the study will be made available to States as an aid in selecting and installing border monitoring systems.

Legal and regulatory framework

27. Within its programme *Legal Activities*, the Secretariat provides, upon request, assistance for the development of nuclear legislation in Member States, and advice on their present national legislation related to the safe and peaceful uses of nuclear energy. The Secretariat has begun to strengthen and expand its legislative assistance programme to all Member States including areas covering legislation relating to the physical protection of nuclear material, and the safety of radioactive sources. As part of this programme a "Model Law" is being developed to provide guidance to States on the elements to be included in national nuclear laws. These activities also contribute to the support given within TC-projects.

Technical Co-operation

28. A number of Technical Co-operation projects (RER/0/056; formerly INT/9/143, RER/9/052, RER/0/015) relate to subjects of relevance to the prevention of illicit trafficking in nuclear materials and radioactive sources. Through these projects, States obtain support in establishing the infrastructures needed to prevent unauthorized use of nuclear material and other radioactive sources, including legislative assistance, technical advice and other support to establish systems for protection and control of radioactive sources.

29. A regional project (RER/0/05) was established in 1997 with the objective of assisting a number of NISs and Baltic States[2] to establish, develop or review national laws governing the safe and peaceful uses of nuclear energy and adopt legislation for implementing the international instruments to which they have acceded. A regional workshop on "Legislative Assistance" for implementation of national nuclear legislation was convened in March 1998 under this project for representatives of NISs and eastern European States. The workshop was followed by separate meetings with participating States to further identify, ascertain and document State-specific needs for legislative assistance.

30. An interregional Model Project (INT/9/143) on "Upgrading Radiation Protection Infrastructure" was launched in 1993 with the objective of strengthening the radiation safety infrastructures in a number of selected Member States and bringing them into compliance with the Basic Safety Standards. Currently, the Model Project covers 53 States[3].

31. Proposals have been made for a technical co-operation project through which - inter alia - assistance would be provided for the training and technical advice on physical protection systems in NISs and a number of East European countries.

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2 Armenia, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Ukraine and Uzbekistan.

3 Afghanistan, Albania, Armenia, Bangladesh, Belarus, Boliva, Bosnia, Cameroon, Costa Rica, Cote d'Ivoire, Cyprus, Dominican Republic, El Salvador, Estonia, Ethiopia, Gabon, Ghana, Georgia, Guatemala, Haiti, Jamaica, Kazakhstan, Kyrgystan, Latvia, Lebanon, Lithuania, The Former Yugoslav Republic of Macedonia, Madagascar, Mali, Mauritius, Republic of Moldova, Mongolia, Myanmar, Namibia, Nicaragua, Niger, Nigeria, Panama, Paraguay, Qatar, Saudi Arabia, Senegal, Sierra Leone, Sri Lanka, Sudan, Syrian Arab Republic, Uganda, United Arab Emirates, Uzbekistan, Viet Nam, Yemen, Zaire, and Zimbabwe.

Outlook

32. The programme on "Security of Material" will continue to focus on the prevention of illicit trafficking. Nuclear materials need to be protected at all times, with improved international standards underpinning national efforts to provide adequate protection. Physical protection personnel will continue to require training and opportunities for exchanging views and experience with colleagues from other States. Against this background, the Secretariat will continue its effort to co-ordinate bilateral and multilateral programmes in the physical protection area.

33. The work to protect other radioactive sources will also continue. During the past year, radioactive sources have been confiscated (by States) that otherwise could have had serious impact on health and safety. States have, in their correspondence with the Agency, indicated an increased awareness of the necessity to arrange for systems that would provide secure management of radioactive sources.

34. The Secretariat foresees the need for increased effort to assist States in the assessments of systems installed for protection of nuclear materials and/or radioactive sources; such assessments should be made by teams of experts from Member States. The Secretariat will, if so requested, help States to perform "self-assessments" of SSACs and physical protection systems by assisting them in acquiring the necessary tools.

35. The Co-ordinated Technical Support Programme (CTSP) has provided a valuable contribution to the NIS for nuclear material control and has proven its effectiveness for such support. The CTSP will continue to be applied to the NISs. Consideration could be given to extending the CTSP to States other than NISs, if there is sufficient interest by the respective Donor States or Recipient States.

36. The proposed Regular Budget for 1999 and the budget estimates for the year 2000 envisage an increase in the regular budget resources for the programme on "Security of Material". This increase will allow a reliable and longer term commitment of the Agency in activities aimed at preventing such unauthorized use of nuclear material and other radioactive sources that could result in illicit trafficking of these materials.

37. An evaluation of the programme on "Security of Material" is planned for the coming year, to be carried out with the assistance of experts from Member States.